THE FARM INDEX

U.S. Department of Agriculture/June 1971

Outlook

A better story for farm prices is in the making for the second half of '71.

Livestock prices are expected to pick up around midyear in response to tapering supplies and stronger demand. On the crop side, economists figure that supplies will stay tight until the '71 crops are pretty well made. From then on, prices may decline seasonally but are expected to remain above recent years because of reduced stocks. The crop projection assumes good demand in domestic and foreign markets, and to the extent possible takes into account uncertainities about the corn blight, weather, and producers' reaction to the new farm program.

Translated into farm income, this means **producers will gross more in '71 . . . but they may net less** because of the persistent rise in expenses. Gross income for the year is now estimated at around $57½ billion—up from $56.2 billion in '70—and net income, slightly under last year's $15.8 billion. The income per farm, however, will approximate the record of nearly $5,400 of the past 2 years, assuming a further decline in farm numbers.

Cash receipts from livestock will probably at least equal 1970's $29.1 billion. Crop receipts, last year $19.6 billion, are estimated higher by around $1½ billion, always depending on growing conditions and the outcome of the harvest.

Briefly, here are the "best estimates" of **livestock and livestock product prices** in the months ahead—

Cattle. Fed cattle prices in late spring and summer to average near or above those of a year ago when Choice Steers at Omaha fetched slightly over $30/cwt. in July-September. Feeder cattle prices to be near last summer's levels.

Hogs. The price peak in late summer likely to be $2–$4 dollars under the $25.50/cwt. of July 1970. Fall quotations seen above the $16 of November-December 1970.

Spring lambs. This summer to average near the mid-1970 levels, around $27/cwt. at San Angelo.

Broilers. Better prices than last year expected during the balance of '71.

Eggs. Usual spring decline to be followed by recoverey in summer, except that this year summer prices to average lower than last.

Turkeys. Weak tone of early '71 to continue into summer. Fall prices expected to approach the fall '70 levels.

Milk. Farm prices projected 4–5 percent higher for the year, reflecting the raised support price for manufacturing milk (up from $4.66/cwt. in '70 to $4.93 in the 1971/72 marketing year). Largest gain expected around midyear.

As farm prices move above year-earlier levels, **retail prices of farm foods** will rise moderately. But the annual rate of increase in grocery stores—estimated at about 2 percent—will be much less than the 5 percent of 1970. Retail prices for pork and eggs will average lower than a year ago, while dairy product prices will be up substantially. Those for poultry and beef will hover near the '70 levels.

The retail value of a market basket of farm foods in January-March was $1,218, up four-tenths of a percent from October-December 1970. The farmer's share came to 38 cents for every dollar consumers spent. This was 1 cent more than in the final quarter of '70 but 3 cents below January-March a year ago.

The farm-retail price spread (marketing margin) will widen again this year, reflecting further increases in labor costs and other marketing charges. However, the gain in the margin will be modest compared with last year's 7 percent–largest in almost 20 years.

CHANGES IN RETAIL FOOD PRICES, 1ST QTR '71

Item	From 4th Qtr 1970	From 1st Qtr 1970
	Percent	
Meat	−1.0	−3.1
Poultry	.9	−4.2
Fish	3.1	11.5
Dairy Products	.5	3.3
Eggs	−1.2	−24.4
Fats and Oils	3.1	11.6
Fruits and vegetables	2.5	.2
Sugar and sweets	.5	5.0
Cereal and bakery products	1.3	5.7
Beverages	.2	9.0
Other preparations	.7	3.2
Total food at home	.6	.8
Food away from home	1.2	6.0
All food	.8	1.9

Total use of farm food commodities may advance about 2 percent this year, led by meat, fruit, eggs, and fats and oils. Per capita use of fruits might be the highest in over a decade, mainly due to sizeable increases in consumption of processed items, particularly citrus juices. Per person use of fresh fruit, however, may be off slightly from the 82 pounds of 1970.

Feed grain output is projected around 10–12 percent above last year's 159 million tons. Corn crop may be up a tenth—if blight damage is no worse than in '70 and if growing conditions are favorable in the western Corn Belt and Northern Plains. However, the demand for livestock feed will slacken in the months ahead. Reason is the lower livestock/feed-price ratio, which in turn is causing some cutback in livestock production.

Gains in milk production per cow in '71 are seen holding near the 2.5-per-cent increase of recent years, assuming normal pasture and forage conditions. Higher productivity per cow, along with a slowing of the downtrend in cow numbers, could boost total 1971 output by around 1 to 1½ billion pounds from last year's 117.4 billion.

Production of red meat last year climber 3 percent from 1969. The 1970 total for the 48 contiguous States was 36,217 million pounds, including estimated slaughter on farms as well as federally inspected slaughter. Beef output rose 2 percent (to 21,651 million pounds); veal dropped 13 percent (to 588 million); pork gained 4 percent (13,427 million); lamb and mutton held steady (551 million). Beef accounted for the largest share by far, with 59 percent of the red meat total. Pork had 37 percent, veal 2, and lamb and mutton 2.

U.S. chick hatcheries had a record hatch last year–3.8 billion chicks, 6 percent more than in '69. Over four-fifths of the chicks were broilers. The leading broiler hatchers: Arkansas, Georgia, North Carolina, and Mississippi; for egg-type chicks: California, Georgia, Florida, Indiana, and Pennsylvania.

Foreign Spotlight: Focus on Africa. Africa's agricultural production in 1970

barely surpassed the 1969 level and trailed the long-term growth rate of 3 percent. Among the three major agricultural countries, the only advance in output was made by South Africa, where better corn and sorghum crops were mainly responsible for a 5-percent increase in total production. In Nigeria, output was held down by smaller crops of peanuts (Nigeria is world's largest peanut exporter), grain sorghum and millet. In the United Arab Republic, a reduced cotton crop was the limiting factor.

U.S. Farm Exports. Exports during the first 9 months of the current fiscal year (July '70-June '71) hit $5.89 billion—up 18 percent from the same period of 1969/70. Most of the gain stemmed from larger shipments of wheat and soybeans. Other significant contributors: tallow, feed grains, cotton, protein meal, soybean oil, edible nuts, slaughter cattle, and dairy products. Exports to the European Community climbed by a fourth to $1.37 billion.

Brazil. A minor exporter of corn as recently as 1962, Brazil has since emerged as one of Latin America's biggest suppliers of this commodity. Corn exports last year reached a record-breaking 1.5 million metric tons, second only to shipments by Argentina. Favorable growing conditions helped the harvest, but other factors were more important in explaining the longer-term growth of Brazil's corn exports, including—wider use of hybrid seed, greater availability of farm credit, improved port facilities, and competitive pricing. Successive currency devaluations have kept Brazil's f.o.b. prices on a par with those of U.S. corn. Also, Brazil has lower production costs, which in 1969 averaged about two-thirds of costs in the U.S.

Spain. This competitor of the U.S. in world citrus markets has been struck by freezing weather for the second time this year. Frost damages to Spain's exportable citrus crop have been estimated at nearly $100 million. Besides cold weather, a virus disease "tristeza" (meaning "quick decline") is affecting close to a third of the total citrus area. In four of the main citrus zones, "whitefly" has also been reported. This pest, relatively new to Spain, causes fruit to drop to the ground before ripening.

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mechanization & the migrant

Migrant workers by the tens of thousands will soon be leaving their home bases in the South to reap the harvest up North. For many of the itinerants, their old jobs may no longer be available.

Agriculture's labor force has been shrinking steadily, but in recent years the sharpest rate of reduction by far has occurred in migratory farm wage workers.

During the first half of the 1960's, between 295,000 and 466,000 domestic migrant wage workers were employed on farms annually. By 1970, the number was down to 196,000 according to the annual hired farm working force survey.

The reductions in recent years were primarily due to adoption of labor saving devices and practices in vegetables and sugar beets. This trend will continue, portending further decreases in agriculture's requirements for migrant labor.

The number of foreign nationals doing migrant wage work in the U.S. dropped sharply after termination of the Bracero program in late 1964. There were only 16,000 employed in 1969 compared with from 200,000 to 335,000 in the early 1960's.

The impact of labor saving technology has been uneven, often creating a "vicious circle" effect that hampers both workers who need jobs and employers who need labor.

When mechanization of a crop reduces the number of migrants needed, those who had included the area in their itinerary are likely to skip it.

Growers of other crops worked by migrants in the same area have fewer workers available at times of peak needs. They will have a strong incentive to mechanize or shift to crops using less labor. This, of course, reduces further the employment opportunities of migrants.

The typical migrant farm wage worker is young (63 percent were under 25 in 1970), male (82 percent), and white (92 percent). A sizeable proportion (31 percent) work less than 25 days a year.

The majority do farm wage work only. The 94,000 who did nonfarm work in 1970 averaged 94 days.

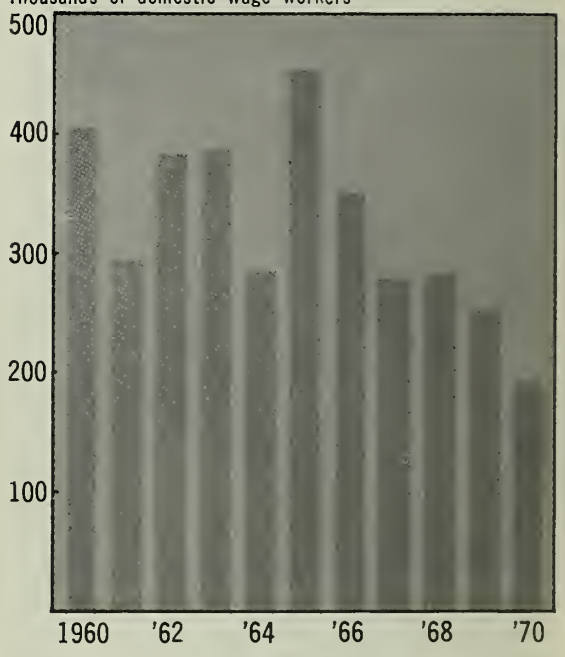
The migrant also is low paid. Average earnings per year for those who worked 25 days or more in 1970 was $2,007. Of this $1,697 came from farm wages and $309 from nonfarm employment.

Information on educational levels of migrants shows they have about the same years of schooling as the rest of the hired farm working force which—as a group—averaged 8.4 years against 12.2 for all workers.

Technological and economic pressures on migrants and other farmworkers will continue. Much of the hand labor in tobacco production may be replaced by machines in the next 5 years, and further displacement in fruits, vegetables, and sugar beets is likely.

Because of lack of skills and low levels of educational attainment, displaced migrants generally are poorly prepared for other jobs. Technology in agriculture—while significantly reducing the demand for unskilled labor—is slightly increasing the demand for higher skilled workers able to operate machines. Few migrants can qualify for these jobs without training or other assistance.

THE VANISHING MIGRANT



Similarly, other industries are becoming increasingly scientific and technical and require higher levels of skills than formerly. Thus, the displaced migrants and other farmworkers find it increasingly difficult to make the transition to rewarding nonfarm employment.

A study of domestic migratory workers indicates they begin the transition to nonfarm work with jobs as unskilled or semi-skilled laborers, or in hotels, laundries, households, and other low-paying occupations. Meanwhile, they continue to work in agriculture when jobs are available. (*1*)

Labor Use Would Drop With Steeper Wages

Higher farm wage rates in store for the seventies will hasten the trend toward substitution of capital for labor. The impact on employment will vary not only with the "would-be" levels of wage rates, but also by type of farm and the individual farm operation.

According to ERS estimates, total employment of hired farmworkers in the mid- and late-1970's would drop 8 percent from the 1966 base if the average wage climbs to $1.45 per hour. A $2.00-per-hour average would reduce overall use of hired workers by roughly a third.

(The minimum hourly wage for covered workers under the Fair Labor Standards Act was set at $1.30, effective February 1, 1969. Farms covered under the legislation are those hiring 500 or more man-days of labor in the quarter of peak employment during the preceding year.)

The economists base their estimates on data from the 1966 Pesticide and General Farm Survey, on past studies on farm wages and product demand, and on the effects of labor legislation.

The specific assumptions in this analysis are that—

- The wage rate increases will apply to farmworkers either by legislation or by spillover effects that such legislation would have on farms not specifically included under legal provisions.
- The establishment of a uniform minimum-wage rate for all regions removes the wage differentials that have historically existed between regions.
- The long-run elasticity of demand for labor is —1.0 on all types and sizes of farms; i.e., a 1-percent change in the farm wage rate would produce an opposite change in farm employment of such a magnitude that the total farm wage bill would remain the same.

The researchers emphasize that the estimates in the table below pertain to the aggregate demand for labor by farm type, and these can be used only as very rough measures. The projections would not necessarily apply at the individual farm level. Further, not all forces may have been accounted for at the aggregate level.

In the case of tobacco farms, labor needs will decline if mechanical harvesters increase in use. Adoption would be on large units where machine cost can be justified.

In the "other livestock" category —which includes mainly cattle and hogs—the trend is toward larger units, and greater use of laborsaving devices. At the same time, many of the bigger farms may need a larger labor component to keep up with the fast-growing demand for livestock products and meat.

On individual dairy farms, the decrease in labor may be greater than the estimates of 19 to 41 percent. Among other things, this will depend on increases in milk production per cow, combined with the effects of mechanization and changes in herd size.

Vegetable crops present a mixed picture. Whereas harvesting of certain crops is already highly mechanized—tomatoes, carrots and snap beans—mechanization is still in the experimental or early adoption stage for lettuce, cabbage, cucumbers and strawberries. (*2*)

WAGE HIKES: THE "WOULD-BE" EFFECTS ON LABOR USE

Type of Farm	Average employment in 1966 [1]	Assumed wage per hour: $1.45	$1.60	$1.75	$2.00
		Estimated decline in employment between 1966 and 1975-80			
	Hours/farm	*Percent*			
Cash grain	852	13	21	28	37
Tobacco	642	33	39	45	51
Cotton	1,518	36	42	47	54
Other field crop	2,284	16	24	30	39
Vegetable	3,891	0	9	17	27
Fruit and nut	2,588	0	5	13	24
Poultry	1,972	0	0	2	14
Dairy	1,194	19	26	33	41
Other livestock	706	0	0	2	14
General	1,522	12	21	27	36
All types [2]	1,051	8	17	24	33

[1] Does not include Alaska and Hawaii. [2] Includes miscellaneous farms.

Rams and Lambs Not for Sheepish Investor

Modern-day sheep ranching in Utah and Nevada—our Nation's top sheep-producing region — requires considerable capital.

Excluding the estimated value of grazing permits, the total investment per sheep ranch in 1969 averaged roughly $215,000—up from $179,000 in the early 1960's.

The overall investment increase was mainly the result of higher livestock prices and increased land values. In 1960, an acre of grazing land was valued slightly under $12. By decade's end, however, the amount exceeded $14. Over the same period, a good breeding ewe rose in price from $22 to $28. Average ram prices soared from $58 in 1960 to $128 in 1969.

Land and buildings made up 67 percent of total ranch investment in the early '60's, but fell to 60 percent by 1969. Meantime, livestock's percentage increased from 26 to 32 percent. (*4*)

Soybean Area Mirrors Crop Competition

In 20 of the past 24 years, farmers planted more acres to soybeans than in the previous year. Total harvested area swelled from about 11 million acres in 1946–50 to 40 million in 1966–70.

Behind this expansion: the development of the combine; greater use of tractor power; the advent of soybean varieties adapted to new growing areas; chemical weed control; and a tremendous growth in demand for soybean meal in livestock feeds and for soybean oil used by food processors.

According to a recent ERS study, soybean acreage was also strongly influenced by production controls on feed grains, cotton, and wheat. In years when there were no changes in farm programs for these competing crops, the area planted to soybeans increased an average of 5 percent over the previous year's plantings.

However, in 1950 and 1954 when allotments were established for corn, wheat, and cotton—soybean acreage rose 27 percent and 13 percent, respectively.

In all regions of the United States, more land planted to soybeans meant less acreage devoted to oats, wheat, hay, cropland pasture, and cropland not pastured, harvested, or used for diversion.

The increase in soybean acreage was also associated with a decrease in cotton acreage in regions producing that crop, and with a drop-off in corn acres in all regions except the North Central. (*3*)

Value of U.S. Farmland Averages $199 an Acre

Farmland has increased in value nationally in the last year—largely because of strong price advances in the Southeast and along the Eastern seaboard.

The average value per acre was $199 in March, up $6 from a year earlier. The national index of farmland value per acre climbed to 121 (1967 = 100, 3 percent above the index of March 1970.

Alabama and Delaware led all States with increases of 12 percent, followed closely by Georgia and South Carolina. In most States east of the Plains region, farmland value rose by more than the U.S. average.

By March 1 of this year, the total value of farm real estate had risen 2.7 percent to $214 billion.

The average value of farm real estate per operating unit was $83,300, up 5.6 percent from March 1970. (*26*)

Farming's Income Share Slips in All Regions

The production and marketing of agricultural commodities may well be one of the Nation's leading industries. But farming accounts for a small part of the total personal income of people in the U.S. In 1970, less than 3 percent of personal income was directly attributable to farming per se.

The percentage has been trending downward for some years. In the 1963–69 period, farming's share of total personal income dropped from 3.4 percent to 2.6. All 10 agricultural regions experienced declines.

An analysis of data from Federal income tax returns for 1966 showed that even of the 3 million individuals reporting farm income in that year, only 1.2 million reported farming as their main source of income.

Among the production regions, the Northern Plains was clearly the most dependent on farming. Yet even there, fewer than one-fifth of all individuals reported farm earnings. More than 40 percent of these received most of their income from sources other than farming.

The regions relying least on farming were the Northeast and Pacific areas, where fewer than 2 percent of the individuals reported farm earnings.

Likewise, relatively few individuals derived most of their income from farming in the Southeast, Delta, and Southern Plains. Part of the reason may be that the per farm earnings are relatively low in these regions, and are more apt to be exceeded by off-farm income.

The average individual with combined earnings was better off economically in 1966 than in 1963. Together, farm and off-farm income averaged $6,460 in 1966, compared with $4,650 3 years earlier. (*5*)

FARM INCOME: NORTHERN PLAINS RELIES ON IT THE MOST

Region	Personal income attributable to farming [1]			Individuals with farm income in 1966		
	1963	1966	1969	Number	As pct. of all individuals	With farming as major source [2]
	Percent			*Thou.*	*Percent*	
Northeast	0.8	0.8	0.7	198	1	33
Lake States	3.4	3.4	2.5	350	6	44
Corn Belt	3.8	3.8	2.8	759	6	45
Northern Plains	12.7	13.9	11.6	306	17	57
Appalachian	5.1	4.1	3.5	426	7	38
Southeast	4.9	4.0	3.5	200	4	30
Delta	9.6	7.7	8.1	145	6	32
Southern Plains	5.3	5.0	3.8	307	7	30
Mountain	5.9	5.6	5.0	146	6	39
Pacific	2.8	2.8	2.3	166	2	26
48 States	3.4	3.2	2.6	3,003	4	40

Sources: Departments of Commerce and Treasury. [1] Personal income is current income from all sources, including transfer payments, measured before taxes except for individual contributions to social security. [2] Among individuals with farm income, those reporting farm losses accounted for more than half of all individuals with a nonfarm major income source.

Environment:

THE LEGISLATIVE RECORD

Nineteen-seventy was what some observers have described as a "pivotal year" in environmental action. The President signed into law several major pieces of legislation relating to environment problems.

This year, as of early May, there were some 2,500 bills and resolutions on the environment that were pending consideration by the 92nd Congress. A number of bills provide for more controls on the use of agricultural pesticides. Others call for a regional water quality act, a national environmental data system, and an environmental financing authority, to name only a few.

One way or another, some of the legislation being considered—or already passed into law—will affect U.S. farmers, agribusinessmen, and others who help produce agricultural commodities or process or market them. To briefly review some of the laws enacted last year—

The National Environmental Policy Act (Public Law 91–190). Signed by the President on January 1, 1970, this is perhaps the most significant legislative act relating to the environment. It establishes a national policy on the environment, provides for a Council on Environment Quality and requires that environmental impact statements be prepared for Federal actions.

The general policy declaration in the Act is to encourage a productive and enjoyable harmony between man and his environment; to promote efforts that will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of man; and to enrich the understanding of ecological systems and natural resources important to the Nation.

The Council on Environmental Quality established under the Act started operations on February 1, 1970. In August, the Council published its first annual report. Of particular interest to agriculture were the Council's views on the need to keep attractive rural lands from being consumed by urban development. When considering "what needs to be done," the report stresses intensified research and action approaches to minimize agricultural pollution caused by plant nutrients, animal wastes, and pesticides.

In the transmittal of the Council's report to Congress, the President called for a National Land Use policy and for new approaches to recycle what now are considered wastes. He also included proposals designed to encourage growth in rural areas, small cities and towns.

A provision in the Environmental Policy Act requires that detailed environmental impact statements be submitted by Federal agencies with every recommendation or report on proposed legislation or other major Federal actions that might affect the quality of the environment. The impact statements are submitted to the Office of Management and Budget and the Council on Environmental Quality. About 300 statements are being submitted monthly.

The Resource Recovery Act (91–512). It provides funds for the construction of improved solid-waste disposal facilities and for demonstrations of area-wide resource-recovery systems. Special studies will be conducted to determine recommended incentives or disincentives to accelerate the recycling of materials from solid wastes, with emphasis on motor vehicle hulks. Success of these studies would improve the rural areas by minimizing their use as auto grave yards.

The law also establishes a National Commission on Materials Policy. The Bureau of Mines is authorized to spend $51 million for research in metal, mineral, and solid waste disposal.

The Environmental Education Act (91–516). Its purpose is to encour-

age and support the development of new and improved curricula designed to enhance the understanding of environmental quality problems. The Act provides support for education programs at the elementary and secondary school levels, as well as training programs for teachers, public service personnel, and community, labor, industrial, and business leaders and employees. The program is designed to reach a broad target group and, presumably, grants can be made to any public agency or private non-profit organization engaged in environmental quality improvement. The Act provides $5 million this fiscal year, $15 million in 1972, and $25 million the following year.

The Clean Air Act Amendments of 1970 (P.L. 91–604). It requires the development of a non-polluting automobile by 1976, authorizes $1.1 billion for research over the next 3 years and authorizes the setting of national air standards. It gives a time schedule for States to establish and enforce a clean air program. Industrial emissions hazardous to public health are subject to mandatory Federal standards. New factories, power plants, and other stationary sources of pollution will be required to use the best control technology available. This legislation provides for citizen suits and provides for a fine of $25,000 per day of violation.

Public Law 91–617. This law, an amendment to the Consolidated Farmers Home Administration Act of 1961, broadens the lending authority of the Farmers Home Administration. It permits the use of insured loans to tax-exempt public bodies for sewer and water facilities. It also broadens some of the authority to include county organizations and waste districts, in addition to municipalities. Farmers Home Administration loans and grants are made to groups serving open country and rural towns and villages with population of up to 5,500.

Besides including environmental quality control in his 1970 State of the Union message, President Nixon presented a special message to Congress on the subject. Among other things, he proposed a $4-billion appropriation to cover the Federal share of a $10-billion matching-fund program for waste treatment facilities to be allocated over the next 4 years.

Action was taken, or progress was made, on most of the President's recommendations. In October 1970, the President signed a bill authorizing $1 billion in funds for grants to States for waste-treatment plant construction, and also authorized the use of a $440 million carryover from fiscal 1970 funds.

Executive Order 11574 directed the Corps of Engineers to implement a system of Federal permits for industrial discharges into nearly all U.S. waterways. The authority for the permits is an old 1899 law known as the Refuse Act. Permits for all new discharges will be required immediately. Plants already discharging into waterways will have until July 1, 1971, to secure permits. The applications for permits are expected to provide a catalog of the wastes that industry is putting into the Nation's rivers, lakes, and estuaries. Municipal sewage is specifically exempted from permit requirements. Anyone who points out violations of the Refuse Act is entitled to half of a $2,500 maximum fine specified for violators. More importantly, the Refuse Act can be used to seek antipollution injunctions.

President Nixon in late 1970 pulled together several functions of existing agencies into a new *Environmental Protection Agency.* The role and function of EPA, an independent executive agency, is to: (1) establish and enforce quality standards, (2) conduct research on the adverse effects of pollution and on methods of control, (3) administer grant programs and provide technical assistance, and (4) assist the Council on Environmental Quality on policy matters. EPA will have 10 regional offices and now has 5,600 employees. Its budget is $1.4 billion for fiscal '71.

Among EPA's numerous activities is the regulation and monitoring of pesticides—a function formerly performed by USDA.

Within USDA, Secretary Hardin has established an *Environmental Quality Executive Committee.* The functions of the Committee are to coordinate the Department's responses to Congress, the Office of Management and Budget, and the Council on Environmental Quality; and to initiate and review legislative and policy proposals pertaining to environmental matters. The committee also provides guidance to Departmental information and training programs.

The Department, through its Executive Committee, currently is reviewing its programs to determine how they can be modified to assist rural America in meeting its problems and fulfilling its responsibilities for maintaining a quality environment.

Secretary Hardin is seeking new directions for the Department's program for the environment. The Department's environmental program for the 1970's, as it is now taking shape, will include five chief elements:

- Identification, retention, and protection of land for agricultural production, with particular concern for Class I and II land, since it is of limited supply.
- Designing of new approaches to the use of land released from agriculture for esthetic and recreational purposes, especially around population centers.
- Stimulation of selected small- and medium-size growth centers around the Nation.
- Intensification of efforts to determine the capacity of land to absorb wastes and to design means of converting wastes into beneficial uses.
- Finally, modification in the use of agricultural chemicals, to include a number of biological control mechanisms that would replace the more toxic chemicals. (*6*)

City-County Merger Gets Vote of Approval

Residents of the rural-urban fringe of Nashville, Tenn., who were brought into a metropolitan government by a city-county consolidation, generally liked the improved services they got, despite a hefty increase in taxes.

Most rural voters opposed the consolidation of Nashville with Davidson county when it was first attempted, unsuccessfully, in 1958. Rural opposition was still widespread when the plan was voted in 4 years later.

An ERS-sponsored study, however, shows that fringe residents have realized solid gains from the merger. The study also indicates that they were aware of these improvements and generally satisfied with the local services provided by the metro government.

Impetus to consolidation was a collection of ills similar to those affecting many urban areas of the nation. Population was growing rapidly in the suburbs and declining in the central city. Increasingly, fringe residents tended to work in the central city while farm employment shrank rapidly.

Land use was inconsistent and haphazard. A mixture of subdivisions, farms, and commercial buildings dotted the countryside.

Government services for both urban and rural residents improved following the consolidation.

Most significant improvement was made in the school system. Expenditures per person increased in both city and county. The curricula were expanded, teachers' standards improved, and additional administrative and supervisory staff added. Spending for textbooks increased fourfold. School health and pupil personnel services were consolidated.

The new metro government generally upgraded public schools in the fringe area. Teachers' salaries were equalized and all schools now offer the same basic curriculum.

Law enforcement was strengthened by the consolidation. City and county patrols were merged and a county-wide professional police operation instituted. Major crime declined 7 percent in Nashville in 1965 while increasing 5 percent nationally.

Under the new metro government, a park board was established with authority to acquire park land in advance of urban development. Priorities were established and school and park facilities were combined for recreational use.

Administration of road maintenance was improved. Larger resources made it possible to buy specialized equipment. Expenditures for general services in rural areas increased sharply.

Costs rose with the improvement in services. Expenditures the first year were about 7 percent higher than the total for the separate jurisdictions the preceding year.

Most noticeable to rural fringe residents was a sharp shift in taxes from urban to rural residents. In the first year, property tax rates of rural residents rose about a third while those of city residents dropped slightly.

In the second year, the metro government broadened its revenue base by adopting a sales tax and a user charge for sewer and water financing. Tax rates on property were reduced.

An opinion survey showed that fringe residents were generally satisfied with the improved services, but had reservations about the tax situation.

More than four-fifths rated satisfactory all services as a whole, while more than half were satisfied with each type of service.

More than two-thirds of the rural residents thought the metro government more efficient than the previous setup. About the same proportion said they received as much or more attention from metro councilmen than they did from their magistrate under the previous county government.

About 60 percent considered taxes too high under the metro government. But 54 percent said their present attitude toward local taxes was about the same, or more favorable, than under the county government.

Also, well over half—57 percent—of the fringe residents believed that the tax burden under metro was more fairly distributed. (*7*)

The Better Educated Have Better Abodes in Ozarks

In the rural Ozarks, if the head of the family has at least finished high school, has a good income as a white collar worker, and holds a mortgage on the home, chances are that his home is air conditioned, has hot and cold running water, and was built since 1949.

This information comes from Economic Research Service interviews with some 1,400 rural Ozark households.

The results showed that the quality of rural housing was significantly related to household incomes. Yet the relationship was far from perfect. Of the households with incomes at the seriously deprived level, only about two-thirds lived in substandard houses and nearly one-third actually had homes that met minimum standards of quality.

On the other hand, one-fifth of the most affluent households (in the highest of five income levels studied) lived in dwellings designated as substandard.

To a significant degree the higher the level of formal education of the head of the household, the better the quality of the house the family lived in.

The same was true of the type of employment of the household head. White collar workers had the highest quality homes on the average, blue collar workers' homes came next and service workers' abodes were third.

But mortgaged homes by and large were better than homes that were free and clear of mortgage encumbrances. The likely reason for this is that newer homes were more apt to be mortgaged.

Age and sex of the head of the household appeared to have no statistical relationship to home quality in the Ozarks. Evidently many of the older household heads whose spouses have died had adequate homes before their incomes were reduced.

Farm houses were found to be about the same quality as rural nonfarm houses, probably because many Ozark farmers had off-farm incomes.

Renters lived in houses that were substantially as good as those that were owned outright or mortgaged.

Overall it was found that only 58 percent of the differences in quality of homes was associated with variations in household income, level of education and the market value of the property. (*8*)

Special Taxation For Farm Preservation

Will granting tax incentives actually help preserve farmland or "open spaces," particularly in the rural-urban fringe? There are no hard and fast answers.

Nevertheless, pressure for some sort of special treatment for farm and other open land has prompted nearly half our States to enact policies for "differential assessment" of property used for agriculture. This is a direct departure from the traditional American property tax that is imposed at a uniform rate on nearly all property, based on assessed market value.

Differential assessment laws fall into three broad categories: preferential assessment, deferred taxation, and restrictive agreements.

Under preferential assessment, land devoted to agricultural use is assessed on the basis of its value in *that* use, as opposed to its market value for potential use, such as for housing subdivisions and recreation communities.

Opponents of preferential assessment claim the tax advantages often benefit land speculators rather than farmers. They maintain that speculators can get their property classified as farmland by performing minimal farming operations.

Weaknesses in preferential assessment have led some States to adopt deferred tax laws. To qualify for deferred taxes in New Jersey, for example, a landowner must hold over 5 acres actively used for agriculture, both in the appropriate tax year, and the 2 previous years.

If the landowner changes any land under this program into nonagricultural use, a "roll-back" tax is levied. This is imposed for the year the change is made, plus the 2 preceding years.

The roll-back equals the amount that was saved each year because of the special agricultural assessment. It removes some of the incentive for individuals holding land for relatively near-term urban use to apply for the differential assessment.

Under the preferential assessment and deferred tax laws, the community has no alternative but to grant financial benefits to owners who qualify and wish to continue farming. This can result in a clash of interests if the community decides there are farms located where urban growth should be encouraged.

To meet this problem, several States have enacted legislation for restrictive agreements. These are voluntary, but legally binding agreements between landowners and the local government.

In Hawaii, for example, a farm owner may petition the State to receive the differential agricultural assessment. The petition is granted if the State considers agricultural use of that land in accord with Statewide development plans.

In return, the farmer agrees to keep his land in agricultural use for a minimum of 10 years. The contract is always renewable, but after the fifth year, *either party* may cancel the agreement. Advance notice of 5 years, however, is required.

An important advantage of the Hawaii approach is that it's tied closely to planning and zoning, so it can be used to guide land in particular areas into the uses the community wants. (*9*)

Satellites May Reflect Farmland Use

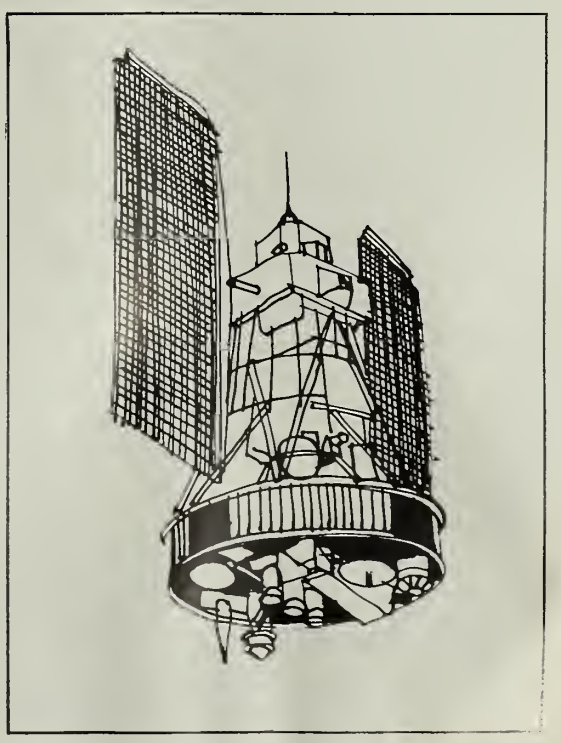
The U.S. Department of Agriculture may go to outer space to get the facts for putting together its studies on land use. Earth orbiting satellites could provide much of the data now obtained by conventional methods.

Approximately 90 percent of the data now needed for the Department's periodic land use report could be obtained directly from satellite imagery, according to a recent study based on the simulation of satellite-scale photography. An additional 5 to 8 percent of the data, though not directly discernable, could be inferred from imagery and supplementary sources.

Satellite imagery permits specific and use data to be tied to specific geographic locations. This should greatly increase the value of the USDA periodic report as well as other studies such as the simplification of land use inventories.

Unobtainable from space photos are data relating to land ownership; crops grown as part of agricultural programs; end-use of specific crops; transitional vegetation areas and some multiple-use areas.

Weather problems are the most serious drawback to successful use of satellite imagery. (*10*)



BUSINESS AS USUAL AT THE

Sales of livestock direct from farm to packer are gaining momentum. But the figures on nationwide marketings show that thousands of producers still prefer the auction.

The livestock auction industry—now mature and thriving—was born and raised during the Roaring Twenties and Depression Thirties.

Numerically, auctions are holding their own—an estimated 2,500 in 1970 versus 2,525 in the early 1950's when numbers reached their peak. In terms of business done, the total sales volume handled by auctions has been going up.

True, their share of receipts from slaughter livestock has dropped during the past several decades. However, a high proportion of feeder livestock moves through auctions. And in some areas such as the South, auctions remain the biggest market channel for all livestock species combined.

Where auctions have lost business, it's mainly been due to the competition from meat packers and dealers who buy direct from producers. The one exception is slaughter calves. Over half the Nation's slaughter calves are sold at auction, and the share has been growing in recent years.

Since 1960, as the table in the next column shows, there has been no distinct trend in the percentage of other classes of slaughter livestock moving through auctions.

Since auctions have been holding their own during the last decade, prospects are that they will continue in the years ahead to grow in line with general trends in the livestock and meat industry.

The development of auctions can be traced to a set of circumstances that prevailed during the first quarter of this century. Back then, terminal markets were by far the most important source of slaughter livestock bought by packers, and auctions were practically nonexistent. In 1923 the terminals accounted for 75–90 percent of total Federally inspected slaughter supplies.

Beginning around 1930, the terminals gave ground to auctions and direct sales. By 1940, over 2,000 auctions had been established in all States and in most all centers of livestock farming.

Why auctions? The explanations are several. One is that during the Depression, the low livestock prices forced farmers to seek cheaper ways of marketing. Costs of selling through the terminals (including trucking and market charges) absorbed a fair share of producers' receipts owing to the terminals' distant locations—usually at a major rail head—plus the fact that the terminals levied a fixed marketing charge. The local auction offered an attractive, lower cost alternative.

More importantly, in the thirties roads got progressively better and trucks came into wide use. Small lots of livestock could be quickly and economically transported over moderate distances to the local auction market.

Meantime, the packers were extending their periphery of operations by setting up country stations and offices. Due to improved transportation facilities, they also no

PACKER PURCHASES FROM AUCTIONS

	Cattle	*Calves*	*Hogs*	*Sheep & Lambs*
	Percent			
1960	*16*	*32*	*9*	*11*
1962	*19*	*46*	*11*	*15*
1965	*21*	*49*	*14*	*12*
1967	*18*	*52*	*16*	*16*
1969	*17*	*52*	*14*	*13*

longer had to rely on the terminals.

In time, farmers came to like doing their own marketing. There was the added bonus of social contact at the weekly sale. The auctions became a kind of rural community center, and a source of information on farmers' production and marketing problems.

With the stiffening competition from people buying direct from the farmer, the livestock auction became less and less significant as an outlet for slaughter stock. Unable to muster enough livestock to attract the larger buyers, many small auctions went out of business.

In their place burgeoned more substantial auctions, handling bigger volumes of livestock and using electronic equipment for weighing livestock, doing the accounting and other tasks formerly done laboriously—and at a higher cost—by auction personnel.

The greatest part of auctions receipts is from sales of livestock for feeding and breeding. Adding these sales to those of livestock-for-slaughter, the annual total may run as high as $6.7 billion per year.

Auctions flourish where livestock are heavily concentrated and where farms are typically small. A major auction area is the North Central region. The South also looms large. Auction numbers there may have grown faster than in any other region since the 1940's. In the Northeast, auctions continue to do most of the business in slaughter calves.

A key ingredient in the formula to successful auctioneering is that the firm must handle a substantial volume of livestock. Otherwise, the auction can't cover costs, nor will many buyers attend the sale. It may well be, as some followers of auction marketing have suggested, that the industry as a whole would have a more secure future if auctions were to become bigger and fewer.

Among other needed changes that might benefit auction marketing: greater specialization in kind and class of livestock handled; selling in lots of uniform grade and weight, rather than the customary practice of selling separately the livestock of the different owners; and improved physical facilities for increased efficiency. (*11*)

At the Cattle Auction

Most cattle feeders don't sell through auctions, but they do buy from them. In fact, the largest part of the national supply of feeder cattle is procured at auction markets. About three-fifths of the feeder cattle in major feeding centers were bought at auctions in 1967, according to a survey of that year. Another third moved directly to feedlots from farms and ranches. The balance of the feeders were purchased at terminal markets.

Principal markets for feeder cattle differ considerably among regions. Auctions hold the strongest position in the major feeding States of the West. In 1966/67, producers in California and the High Plains bought two-thirds through auctions and about a fourth from farms and ranches. Feedlot operators in the western Corn Belt and Colorado purchased about equal numbers from auctions and from farms.

In the Southeast, the majority of farmers raise part of the cattle they feed. Even so, probably over half the commercial cattle feeders buy most of their cattle in one or more of three ways: at special feeder cattle sales arranged with the help of the extension service; direct from farmers; or from the larger regional auctions.

In the Mountain States, feedlot operators raise up to a third of the cattle they feed, with the remainder obtained through auctions or direct from farmers.

Sources of purchases in the Pacific Northwest vary with the season. In January-June, most cattle are bought at auctions outside the region. In July-December, direct purchases predominate, usually within a 150-200-mile radius of the feedlot.

In the Corn Belt proper and the Lake States, the terminals are a more important source of feeder cattle than in the other regions. But the terminals' business has fallen sharply in recent years. (*12*)

Excess Capacity Vexes Cotton Warehousemen

The cotton warehousing industry is having a difficult time adjusting to the downtrend in cotton production. The volume of cotton stored by the warehouses decreased over 40 percent in the 1965–70 period. But storage capacity increased slightly. As a consequence, average use of warehouse space fell from less than 60 percent to about 30 percent.

Since fixed costs must be spread over a reduced volume of business, the industry's storage costs went up more than 60 percent in 1965–70—from $3.53 per bale-year to $5.76. This does not include costs of other services provided by the warehouses, such as weighing, sampling, and compressing of cotton.

An ERS study indicates that only those firms that can keep their costs down will be able to compete in the declining market for warehouse services. Under competitive conditions—in which only those facilities needed to handle and store peak volumes would be utilized—total storage cost would have been reduced to an estimated $3.59 per bale year, based on 1970 price levels and volumes. This would result in an annual warehouse space utilization of about remained in operation. (*13*)

Grain Storage Costs Heading Uphill

An updating of the 1967/68 cost survey of storing and handling grain in commercial elevators shows storage cost in the 1971/72 season to be 20 percent above the levels of 4 years earlier, or an increase of almost 3 cents per bushel.

Combined costs for handling and storing are projected at 22.5 cents per bushel for country elevators (vs. 18.3 in 1967/68); 24.3 for inland terminals (20.0 in 1967/68); and port terminals 19.3 (16.7).

Estimates include cost of 1-year storage plus receiving and shipping charges. (*14*)

Casein: Supplies Getting Tight

Once a fairly sizeable producer of casein, the United States now relies almost entirely on imports to meet domestic requirements. The demand for casein has been picking up in recent years. But this year market supplies of casein became short and prices climbed sharply.

Casein is the principal protein in milk, constituting about 3 percent of cow's milk—or around a third of the nonfat milk solids.

It's one of the most complete proteins available, meaning it contains all the amino acids essential to the human diet.

The main industrial uses for casein continue to be in the manufacture of paper (for coating and sizing) and wallboard and plywood (as an adhesive), and in the preparation of plastics, paints, glue, cosmetics, and some manmade fibers. Casein's uses in traditional industrial applications have been declining with the advent of cheaper substitutes.

But the demand for caseinates in food products has grown sharply. Consumption of edible caseinates—or casein that has been converted to more soluble forms—rose from about 1 million pounds in 1955 to 20–25 million in 1966 and may be 60–70 million pounds currently.

Little data are available showing the amounts of caseinates going for specific foods. The largest users appear to be the imitation dairy products, such as whipped topping, coffee whiteners, and whipping powder. These may have accounted for as much as 14 million pounds of caseinates in 1969. Caseinates are also used in instant breakfast foods, as binders in luncheon meats and sausages, as protein supplements in cereals and baby foods, and in bakery products, soups and frozen desserts.

Another use for casein and caseinates has been in milk replacers for calf and pig feeding. Milk replacers were previously processed from skim milk solids and animal and vegetable fats. Because of the higher prices for skim milk solids, the domestic replacer industry has been using whey with imported casein to approximate the solids in skim milk. With a growing market for milk replacers in the United States during recent years, a greater volume of casein may be going into this use.

All told, U.S. casein consumption came to around 132 million pounds in 1970. It was up 18 percent from the previous 2 years, and about double the consumption levels of the late 1940's.

Prior to World War II, the U.S. casein industry produced some 50 million pounds annually. Since the institution of the dairy price support program in 1949, nonfat dry milk prices have not favored the production of casein. It takes about 100 pounds of fluid skim milk to make 3 pounds of dried casein or 9 pounds of nonfat dry milk. Consequently, the price ratio of casein to nonfat dry milk must be in the vicinity of 3 to 1 to make casein profitable to manufacture. This price ratio has averaged 1.0–1.5 to 1, since 1950 and the start of USDA purchasing of nonfat dry milk.

World casein production has been rising, as has the volume of casein moving in international trade. Almost 300 million pounds were exported in 1969, three times the 1948–52 level. Trade has been increasing at twice the growth rate of world casein production.

However, the export trade in casein has become concentrated in fewer and fewer countries. New Zealand and Australia now account for two-thirds of world exports. What happens to casein production in these countries pretty much determines the world casein supply. In 1969, a widespread drought in New Zealand—No. 1 producer—sharply reduced that country's milk output and thus casein production. Still lower casein production is indicated for 1970/71, due to aftereffects of the drought along with greater diversion of milk into cheese manufacture.

Strong demand and smaller supplies have pushed casein prices to the highest level in recent years. In late February, wholesale casein prices were reported at 37 cents per pound (Argentina fine ground basis, f.o.b. New York), compared with 24 cents a year earlier. Prices are expected to continue strong in coming months, assuming New Zealand's milk output stays near last year's levels. (*15*)

Fish Prices To Jump But Won't Exceed '70 Gains

Shoppers can expect prices at the fish market to be steeper this year than in 1970. But the increase probably won't equal last year's 10-percent jump. Ample fish supplies are expected to hold the increase down.

Inventories of frozen fillets on January 1 were almost 20 percent above a year earlier. Flounder, ocean perch, and whiting fillets were also in greater supply. Cod and haddock stocks dipped from early '70 levels. The decline in cod carryover may have resulted from increased marketings last year, not only by grocery stores and restaurants, but by the growing numbers of fish 'n chips franchises. More abundant varieties of fish may have to substitute for cod in some fish 'n chips outlets.

Frozen salmon stocks at the start of this year were 2½ times larger than in early 1970. Supplies of frozen freshwater fish were generally about the same as last year's tallies.

Shrimp supplies in cold storage surpassed year-ago inventories by close to 15 percent. Those of lobster tails were smaller. Carryover stocks of crabs and scallops remained close to early '70 totals.

January inventories of fish sticks and fish portions were about 10 percent below the 1970 count. And supplies of fish blocks—the raw material for fish sticks and portions—were scaled down nearly a third from year-earlier levels. (*16*)

Open Dating—Consumers' Best Guide?

Open dating—labeling retail food products with a readable date that indicates shelf life—has been an issue for some time, and many food stores have already instituted some sort of a food dating program. However, a study of food stability by the Department of Food Science at Rutgers University raises a question as to whether open dating alone is in the best interests of the consumer.*

Time is not the only controlling factor in the shelf life of a food product. For this reason, the study claims that open dating is not a valid assurance to shoppers that foods are in optimum condition.

Mistreatment during distribution may shorten a food's expected shelf life, or render it unfit for consumption long before any suggested expiration date.

In frozen food, which is obviously highly sensitive to temperature, troublesome abuse areas are the actual storage temperatures and temperature fluctuations. These are more important to quality loss than the actual passage of time. Optimal storage times are temperature dependent, and research on frozen foods has shown losses in quality factors resulting from temperature fluctuations during storage and transportation.

Losses in quality are not necessarily hazardous to health to any known degree. The losses occur mainly in what Rutgers study terms "aesthetic factors," including color, flavor, and texture. Such losses are not generally recognized by the consumer. They are detectable only by trained specialists and scientific instruments.

Temperatures at time of processing may also affect shelf life. Types of equipment used and quality of packing materials also play a part. Thus, identical foods processed on the same day by different manufacturers may have shelf lives that vary considerably.

Food processors are regulated by the FDA "Good Manufacturing

* The conclusions and recommendations of the report are not necessarily those of the Department of Agriculture.

Practices" that apply to handling and storage on the manufacturers' premises. But the postmanufacturing industry—like transportation companies, wholesalers, distributors, brokers, and retailers—is not controlled in any similar manner.

Some postmanufacturing groups set their own standards or are regulated by the food processor. Many of these groups, however, have little understanding of the perishability of food products and often overlook the rigorous handling conditions required. Thus, food products are highly subject to quality loss once they're beyond the manufacturer's jurisdiction.

Based on these and other findings on food stability, the report recommends the exclusion of dates that consumers might consider indicative of shelf life duration. Alternative systems of dating and coding were proposed.

The report urges that exteriors of all shipping cases or cartons be imprinted—in colored inks—with an uncoded date of manufacture (DOM), and specific instructions regarding storage and handling temperatures. The open date of manufacture and accompanying instructions would facilitate orderly stock rotation on a first-in, first-out basis, and correct handling temperatures at food supply stages.

The open DOM, however, is *not* recommended for individual food products displayed in retail food stores. The Rutgers team judged that the actual age of a product tells the shopper little about its quality or expected durability. Nevertheless, shoppers may try to base purchase decision on these dates.

Suppose, for example, companies A and B are marketing spaghetti sauce at the same retail price. The shopper notes B's sauce was made a month later, and bypasses A's product because it's "older". But in actuality, A's sauce might retain its quality much longer because of superior processing techniques.

Another recommended procedure is that manufacturers place a code on each unit or package of food to be displayed on retail shelves. The code need not be open, but its individual numbers or letters should be legible to consumers.

Such a code would indicate product lot, and be used for reference purposes only. Consumers would cite the code in relaying complaints to a manufacturer. In turn, the processor could readily locate, and recall the remainder of the lot.

The study also suggests that individual food products be stamped by retailers with an open date of shelf display (DSD) when they are price-marked. Unlike the date of manufacture or an expiration date, the DSD implies nothing about the product's expected shelf life.

Chilling Experience Prolongs Broiler's Shelf Life

Apart from the obvious—like its size, plumpness, and pigmentation—one "never frozen" broiler is pretty much like the next, at least from the shopper's viewpoint.

Actually, fresh-packed broilers come in two main varieties—ice-packed and chill-packed. The untrained eye can't tell the difference, although sometimes the chilled variety may have a drier look about it.

The big distinction has to do with how the broilers were processed. And as retailers are well aware, the method of processing is an indication of the bird's shelf life. Shelf life, in this case, is measured from the day of processing to the time of eventual sale to the consumer.

All else being equal, the chill-packed bird, whether sold as a whole broiler or as chicken parts, has the longer shelf life. The chill-packed type also commands a higher price at the wholesale level.

The first step in processing is the same for both the ice- and chill-packed birds. Immediately after the birds are slaughtered and dressed at the plant, the internal body temperature is brought down to 40 degrees F. or below, and within a time period of 4 hours or less. This can be done by ice and water chilling, air chilling, or freezing.

Ice-packed broilers are then put into boxes (usually 24 birds to a carton) and covered with 20 pounds of ice. After loaded onto trucks, the entire shipment may be top-iced also. A variation of this mode of packing is to use ice made from carbon dioxide.

Birds going the chill-packed route are first chilled in an ice water slurry; then cooled at 34 degrees F. for 45 minutes; and finally put through a blast freezer to pull the body temperature down to 28 degrees. The birds are held at this temperature during distribution and retailing.

The lower the temperature, the longer the shelf life. Consequently the chill-packed broilers can be held for a few days more than the ice-packed. For the chill-packed, maximum allowable time between processing and purchase by the consumer is 9-11 days. In the store itself, the birds are usually held not more than 7 days.

This compares with a 5-7 day period, from processor to consumer, for ice-packed broilers. In retail stores, the shelf life is 2-3 days. Birds that have not been sold by the expiration date are removed from the display case.

Retailers have been paying a 3 cents-per-pound premium for chill-packed whole broilers. But this is partially offset by savings in labor, cutting, shrinkage, packaging, rewrapping, and spoilage at the retail store. Disadvantages of the chill-pack system include—a high initial investment in equipment and increased inventory and the rigid requirements of temperature control during distribution and marketing (*18*)

The open DSD would benefit retailers by simplifying and encouraging stock rotation. And it would promote orderly in-home use based on approximate time of purchase.

Food processors, the study maintains, have an obligation to provide consumers with as much information as possible regarding home storage conditions, and the maximum time their products could be wisely kept before use.

The stated time period should not imply a date of expiration. Instead, the suggested phrasing is, "To obtain *maximum* quality, store below — degrees F. and use within — days (or months) after date of purchase." Such advice, along with the date of shelf display, should appear on each food package.

The use of an open date of manufacture on shipping cartons, unit package coding, and date of shelf display are general guidelines for distribution of all food products. Each food group, however, poses its own unique marketing problems. The utilization of all three methods isn't always feasible.

For example, half of all fresh fruits and vegetables are sold as unwrapped individual pieces. Stamping each with a date of shelf display would be time-consuming and impractical. Moreover, such a date would not be essential to stock rotation, as the quality and condition of these products is easily judged by visual inspection.

Likewise, the date of manufacture on shipping cartons is unnecessary in the distribution of bread. This is usually brought to stores daily in returnable trays by a bakery routeman who removes products previously unsold.

All the recommended procedures should apply to both canned and dried foods—macaroni, cereals, dried soups, etc. At present, labels on some of these products advise, "Store in a cool and dry place." The report advocates a stronger, more specific message: "Do not store in a hot (greater than 70 degrees F.) and humid place."

With frozen foods, more information is needed, because the quality of frozen foods is highly dependent on home storage conditions. The survey advises that frozen food departments display placards listing suggested temperatures and storage duration, based on type of home freezer. (*17*)

Fresh Apple Use Pared by the Processor

Fresh apple consumption jumped 10 percent in 1970 and reached its highest point in half a decade—nearly 16½ pounds per person.

Of course, apples have been a favorite fruit ever since Eve. But recently, processed products—apple sauce and apple juice especially—have seen the biggest per capita gains.

Our per person use of canned and frozen apple products has swelled from 3.2 pounds in 1950 to about 6.5 pounds today. At the same time, fresh use has fallen 6.3 pounds.

The rapid rise in processed product use is not unique to apples. Similar trends show up for most fruits—apparently because of changes in consumer tastes and preferences, living patterns that include more working wives, convenience in shopping, and changes in kitchen appliances.

Processed fruits are essentially convenient and timesaving foods and consumers seem willing to pay higher prices, if necessary, to obtain these built-in services.

Anyway you eat them, 1971 promises to be a pretty good year for apples. With average weather, we'll have a crop bigger than 1970's 6,349 million pounds.

Output of apples has been on the uptrend for most of the past 15 years; before that, however, it was in something of a slump.

Yields of today's trees are higher due to improved varieties and better methods of caring for orchards. Also, many of the new trees are dwarf varieties, which can be planted closer together than standard varieties. (*20*)

Synthetics Garner Fifth Of Citrus Drink Market

The traditional cold glass of citrus juice with morning toast is being replaced by many consumers with a beverage that is not the real thing.

Synthetic citrus products—those not containing citrus derivatives—comprise about a fifth of the 600 million gallons in annual retail sales of citrus beverages. And synthetic orange drinks, in powdered and frozen form, account for 12½ percent of the total market for citrus beverages.

During 1965–69, synthetic orange drinks' share of the total fruit beverage market grew from less than 5½ percent to slightly over 6 percent. Orange drinks in powdered form increased their market share, whereas that of the frozen synthetic orange juices dropped off.

However, not all the bigger sales of powdered synthetic orange drinks were at the expense of the natural products. More and more powdered synthetics are being bought by consumers such as campers and sportsmen who ordinarily would not buy fresh or frozen varieties.

The popularity of the powdered synthetic orange drink has stimulated considerable interest in developing an acceptable powdered drink made from natural citrus. A determined research program by USDA and industry is now underway to create such a product.

If researchers are successful, the market share of the synthetic powdered orange drink would probably decline. Otherwise, indications are that the powdered synthetic orange drink will retain—but not significantly expand—its current market share during the next 10 years.

Either way, the per capita consumption of natural citrus juices is expected to increase 25 percent by 1980. This assumes that new citrus groves, plus technological developments in the industry, will provide greater supplies at prices competitive with those of the synthetics and substitutes. (*19*)

SOUTH AFRICA

Self-sufficient in nearly all agricultural commodities, South Africa has yet to overcome the strongest impediment to sustained growth in farm output: vagaries of weather.

In the United States, roughly 1 acre in 4 consists of cropland. In South Africa, the ratio is 1 to 10.

Undoubtedly, more land could be put to the plow in South Africa—already one of the continent's top three agricultural producers. But at this time, and at the present levels of technology, the costs would be prohibitive.

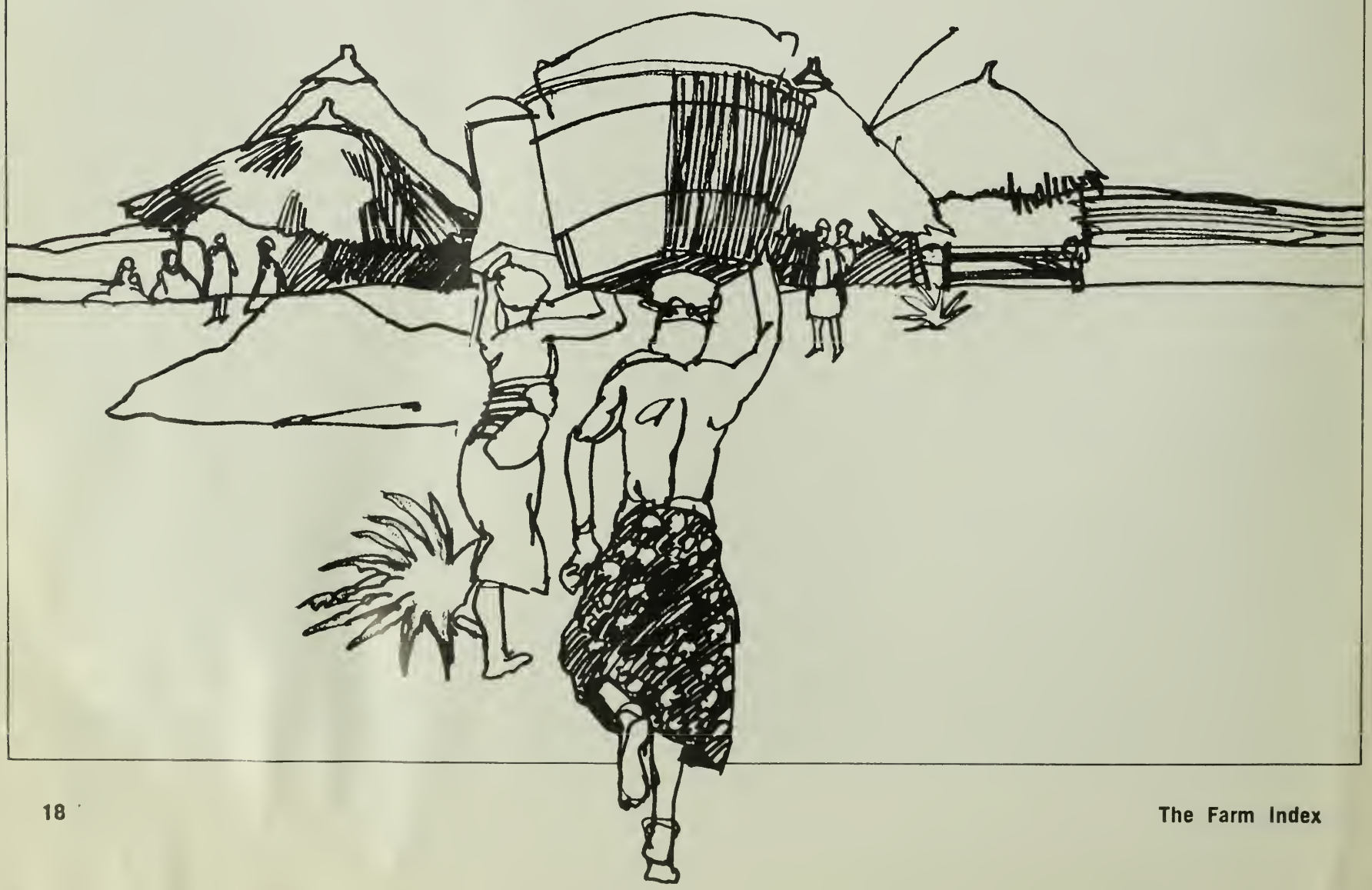
The most invincible of all roadblocks to development is posed by climate; specifically, erratic and low rainfall and scarcity of natural water supplies. Hardly a decade goes by that the country does not experience a series of damaging droughts.

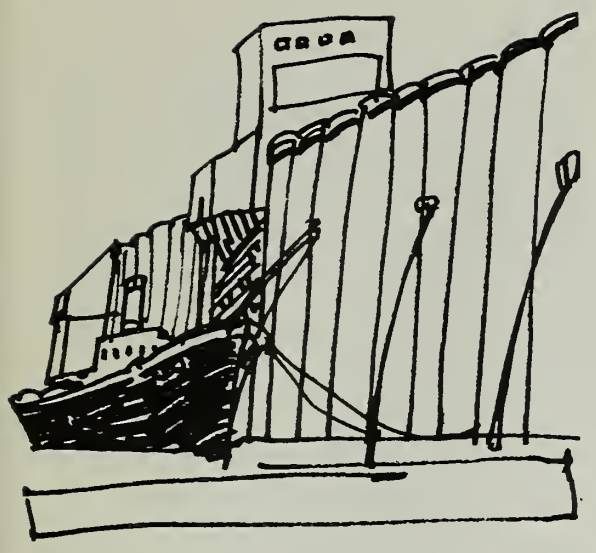
The most recent dry spell, in 1970, lasted more than 8 months. The eventual rains came in time for good crops of grain sorghum and corn. The corn harvest, at 6.4 million metric tons, was the second largest on record. But production was down for many other commodities, wool in particular. Some 3 million sheep had to be liquidated due to reduced carrying capacity of pastures. The herd now numbers an estimated 36.6 million head. The drought's effect on wool production and wool quality may linger for several years.

Wool from Merino sheep is a major foreign exchange earner for South Africa. It ranks second only to gold and diamonds. Also important are exports of fresh and canned fruit, corn, sugar, and animal feeds.

Just as weather problems hamstring efforts to raise farm yields and total agricultural production, climatic extremes also limit South Africa's potential as a world trader in agricultural commodities: the Republic has trouble establishing itself as a reliable supplier and customer for certain farm products. As a corn exporter, for example, in some years South Africa has been among the top three world suppliers, but in other years the Republic has had to import corn.

On the other hand, South Africa owes much of its agricultural might to climatic factors. In the Southwest the climate is "mediterranean," in the Northeast, "near tropical," and





in the Transvaal Highveld, "temperate." Thus, the country can grow a great variety of farm products, and often export them at an advantage over other world shippers. As a Southern Hemisphere fruit producer, South Africa's apples and peaches reach the market when northern supplies are low and prices are relatively high.

A net food importer 60 years ago, the Republic is today Africa's foremost producer of livestock and dairy products, sugar, corn, wool, pineapples, citrus and deciduous fruits. The country is also the major user and producer of fertilizer.

Commercial agriculture began to develop after World War I with the opening of virgin lands in the interior. Production rose sharply during World War II in response to the bigger international demand for food. However, the gains in production are also credited to the government's program of price and marketing controls begun in 1937.

Nearly 90 percent of the total value of agricultural production is under the supervision of 21 quasi-public commodity boards. Some are mainly concerned with domestic marketing; others control both domestic and export marketing. Most control imports. Equally varied are the means of controlling prices, ranging from price supports and pooling schemes for certain commodities, to guaranteed prices and contractual arrangements for others.

Marketing promotion both overseas and in the domestic market is partly subsidized by government and partly paid by levies assessed on crops. Levies also finance some industrial research in crop utilization.

Though the country is self-sufficient in most agricultural products, commercial production is confined mainly to farms and ranches operated by whites. The predominantly African Bantu reserves produce only about half their own food requirements. The Bantu reserves are largely situated in the eastern part of the country. Even though rainfall is adequate, agriculture suffers from overstocking of grazing lands, erosion, poor crop yields, and rough topography.

Flowers Get a Lift

If it's true that plants and flowers have their emotional ups and downs, then 1970 was a joyous year for plants that get a lift out of travel.

U.S. imports of fresh cut flowers and buds were valued at $1.7 million in fiscal 1970—nearly double the trade of the previous year and representing a 17-fold gain from 6 years earlier.

Canada, with $638,000 of the 1969/70 cut flower bouquet, replaced Ecuador as the leading supplier. Colombia, Australia, and the Netherlands were also important sources.

U.S. imports of all nursery and greenhouse stock (including cut flowers) totaled $18.9 million, up 15 percent from the previous year. Tulips and hyacinths led among the bulb imports. Nearly all came from the Netherlands.

While the trade in greenery imports was flourishing, our export boutonniere of cut flowers wilted to $1.1 million in 1969/70, or about half the value of year-earlier shipments.

U.S. exports of foliage, shrubs, and bushes dropped 22 percent to $680,000. At $1.1 million, shipments of bulbs, roots, and corms fell for the third straight year. Rose exports, however, rose to $871,000 from 1968/69's $687,000, with nearly all the rose stocks going to Canada. (*22*)

The government in recent years has endeavored to spur the economy of the tribal homelands. Agriculture is getting priority. Through a land-use capability system, cultivation is being restricted to those lands with best possibilities for tillage, with grazing and tree crop cultivation being promoted on the hillsides. New irrigation projects are also being established.

South African officials continue to show concern over the possibility that the United Kingdom may join the European Community. Almost a third of South Africa's $600-million exports of farm products go to the U.K. In the event the U.K. were to be admitted to the EC, the privileges now enjoyed by South African produce would presumably be lost to associate EC members. Specifically affected would be exports of fresh and canned fruit, wine, sugar, preserved meat, and fishmeal. (*21*)

Veers in Cotton Trade To Benefit LDC's

A bigger world demand in prospect for cotton may aid economic growth in less developed countries (LDC's) judging from the market outlook for 1980.

Under intense competition from manmades, cotton is expected to capture less than half the world fiber market—10-percent less than in the mid-1960's. However, total usage of cotton is projected higher in 1980—almost a third above levels in the mid-1960's, based on expected growth in world population and incomes.

Also by the onset of next decade, the pattern of world cotton trade will undergo substantial change. The economies of the LDC's stand to benefit. The LDC's—many of them already dependent on cotton as their major earner of foreign exchange—will supply over half the world demand.

World trade in cotton textiles (yarn, fabric, and clothing) is projected to exceed trade in the mid-1960's by about 40 percent. Around

half of these textile exports will originate in the LDC's, compared with a third during 1965–67.

Meantime, developed countries are expanding their cotton textile imports. Their exports, however, are holding about even. By 1980, Japan is anticipated to be the only major developed country where textile exports exceed imports.

Dependence upon textile imports will be reduced, if not eliminated altogether in most of the LDC's. For example, textile industries are developing in several East and West African nations. Uganda now produces enough yarn, fabric, and clothing to fill almost all its domestic requirements. Some LDC governments currently forbid the importation of any cotton textiles.

Many LDC's find it desirable to expand textile exports because their value is higher than cotton lint. Cotton clothing exports produce earnings three to six times greater than equivalent lint exports. Also, the development of textile mills stimulates domestic economic activity.

Currently, the LDC's contribute three-fifths of total world exports of cotton lint. Their portion by next decade will probably rise to two-thirds, bringing the share to over 3 million metric tons. Their imports account for about 17 percent of the world's total.

Combined trade in cotton lint and textiles in 1980 could result in net earnings of $1.5 billion for the LDC's—up $600 million from the annual average in 1965–67.

As net earnings from trade in cotton lint are projected to decline slightly, all the gains in earnings will be from textile exports. Hong Kong, India, the UAR, South Korea, Pakistan, and Taiwan—the largest LDC cotton textile exporters in the mid-1960's—are expected to glean most of the growth in foreign exchange. Comparative costs, product pricing policies, import restrictions, and national trade and development policies are the factors behind the projected changes in trade patterns in the years ahead. (*25*)

Uptrend in Taiwan Exports Seen Weakening

From near bankruptcy following World War II and heavy reliance on food assistance from other countries, Taiwan (Republic of China) has since become one of the Far East's leading exporters of agricultural commodities.

The value of these exports reached $260 million in 1969, up about 8 percent from a year earlier and more than 75 percent of the 1963 level. Sizeable increases were registered for shipments of meats, fruits, and vegetables.

Agricultural exports are projected to continue at high levels through 1980, according to a study by ERS in cooperation with the National Taiwan University. However, Taiwan's imports of farm commodities —in 1969, totaling $277.6 million— will probably rise faster than exports.

Per person use of agricultural products will accelerate rapidly during the next 10 years, reflecting further urbanization and gains in per capita incomes of approximately 5 percent annually. Total consumption of corn, dairy products, and eggs is expected to more than triple during 1970–80.

In view of the country's limited land resources, much of the bigger demand will have to be provided through imports—particularly of animal feeds, dairy products, wheat, and cotton.

A large volume of these imports will continue to be of U.S. origin. (In 1969, agricultural imports from the U.S. were valued at $107 million.) But the ERS study also notes that certain commodities imported from the U.S.—corn, soybeans, cereals, cotton, and tobacco—may account for a diminishing proportion of the Taiwan market in 1970–80. Reason is the prospect of sharpening competition from other exporters to Taiwan, as well as the country's desire to diversify the sources of its imports.

Declines are projected for Taiwan's shipments of rice and sugar. But these will be more than offset by larger exports of fresh fruits and vegetables, animal products, and cotton goods. Exports of canned pineapples and mushrooms to the U.S. are projected lower. In 1970, U.S. imports of Taiwan's agricultural products came to $50.5 million, primarily vegetables, fruits, and sugar. (*23*)

Mexico's Agriculture Paces Latin Nations

From 1940 to 1965, Mexico's agricultural output increased at rates well above those of other Latin countries. Production grew by an average 4.6 percent a year—considerably faster than the 3.3 percent growth of the country's population.

Meanwhile, diets improved. And exports of farm commodities, which mounted steadily during the 25-year period, became the principal source of foreign exchange earnings.

The impressive gains in agricultural growth are attributed largely to the development of irrigation and modern farming methods. Land reform programs were almost as important. More than two-thirds of Mexico's rural development funds in 1940–65 went to finance irrigation projects. The amount of arable land increased 2 percent annually.

As farmers' purchasing power became greater, they bought more fertilizer, seeds, insecticides, and irrigation water. The combined use of these purchased inputs grew at an annual rate of more than 8 percent throughout the period covered by the review. Major emphasis was also placed on rural education, farm credit, and research and extension programs.

The objective of the land reform program, which was started in 1917, has been the parceling and redistribution of large holdings. By 1960 new landowners had acquired 29 percent of the country's arable land, 43 percent of the cropland, almost half the publicly irrigated acreage, and 54 percent of farm units. (*24*)

Recent Publications

WORLD DEMAND PROSPECTS FOR COTTON IN 1980: WITH EMPHASIS ON TRADE BY LESS DEVELOPED COUNTRIES. Richard S. Magleby and Edmond Missiaen, Foreign Regional Analysis Division. FAER 000.

World demand prospects and future supply sources of cotton lint and textiles are examined to determine their implications for the export earnings of less developed countries. World cotton consumption in 1980 is projected at 14.8 million metric tons, compared with 11.3 million in 1967.

WHEAT AND FEED GRAINS IN THE GREAT PLAINS AND NORTHWEST: STUDY AREA DESCRIPTIONS AND STATE STATISTICAL SUMMARIES. William F. Lagrone, and Roy E. Hatch, Farm Production Economics Division; and Glenn A. Helmers, University of Nebraska. Great Plains Agricultural Council Publication 38.*

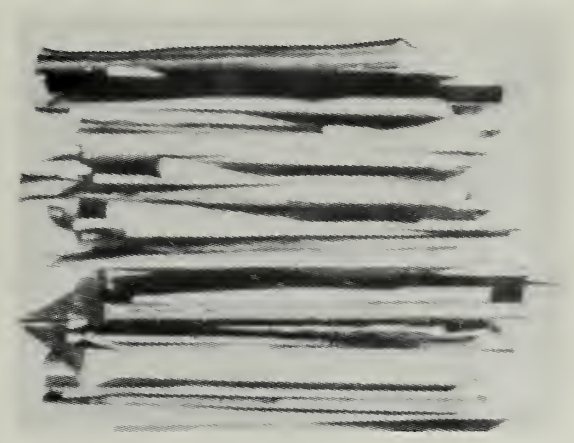
This is a companion publication to a study summarizing the major results of programming resources of the wheat-feed grain producing regions of the Great Plains and Northwest.

ECONOMIC EVALUATION OF LIQUID MANURE DISPOSAL SYSTEMS FOR DAIRY CATTLE. N. D. Kimball, Farm Production Economics Division, and L. V. Lenschow and R. E. Rieck, University of Wisconsin. Univ. of Wisc. Bull. 597

Wisconsin dairymen get rid of cattle wastes by converting the manure to a liquid. Tests show the system greatly enhances the fertilizer value. (See September 1970 Farm Index.)

HIRED FARM LABOR: 1966—PATTERNS; FUTURE DEMAND PROSPECTS; PROPOSED FARM WAGE LEGISLATION. Verner N. Grise, Farm Production Economics Division. Stat. Bull. 462.

This report provides data on the hired work force and the wages it receives. Proposals for farm wage legislation are discussed, and effects of increased wage rates and other factors in farm employment and wages are evaluated. (See page 6 this issue.)



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COST OF STORING AND HANDLING COTTON AT PUBLIC STORAGE FACILITIES: 1969/70, WITH PROJECTIONS FOR 1971/72. Joseph L. Ghetti and Whitman M. Chandler Jr., Marketing Economics Division. ERS 472.

Based on a continuing study, this report analyzes cotton warehousing operating costs for 1969/70 and projects costs for 1971/72.

ESTIMATED COST OF STORING AND HANDLING GRAIN IN COMMERCIAL ELEVATORS, 1971/72. Allen G. Schienbein, Marketing Economics Division. ERS 475.

This study updates the cost analysis of a 1968 survey of 96 commercial grain elevators and develops estimated handling and storage costs associated with operating commercial grain elevators in 1971/72. (See page 14 this issue.)

THE AGRICULTURAL SITUATION IN WESTERN EUROPE: REVIEW OF 1970 AND OUTLOOK FOR 1971. Europe and Soviet Union Branch, Foreign Regional Analysis Division. ERS For. 311.

The review focuses on major agricultural and economic developments of concern to U.S. agricultural interests. The report also provides an analytical comment for shortrun policy decisions and furnishes data on current developments in the agricultural and trade of Western Europe—the major commercial market for U.S. agricultural exports.

A HISTORY OF SUGAR MARKETING. Roy A. Ballinger, Marketing Economics Division. AER 197.

This report traces developments in the marketing of sugar and its principal competitors in the U.S. and, to some degree, in other countries. It is particularly concerned with countries from which the U.S. has obtained large supplies. Government policies toward sugar and sugar trade between other nations are also studied.

CONSUMER ATTITUDES TOWARD LEATHER IN SHOES AND CLOTHING. Edward M. Knott, and Margaret Weidenhamer, Statistical Research Service. MRR 922.

The results of this study, devoted primarily to consumer attitudes toward materials used in upper parts of shoes, can provide guidance to the leather industry in developing improvements in product characteristics. (See Farm Index, February and March 1971.)

AN AID TO PLANNING LAKE USE AND DEVELOPMENT. Chauncey T. K. Ching, FPED, and George E. Frick, University of New Hampshire, cooperating with the Farm Production Economics Division.

In planning the development of a water-oriented resource such as shore front property, many factors must be considered in order to maintain a desirable level of environmental quality. This planning guide develops criteria based on the interrelationship of lake surface area and shoreline length.

NOTES ON ROMANIA'S AGRICULTURAL ECONOMY. Lynn S. Bickley, Foreign Regional Analysis Division. ERS For. 304.

This is the first of a series of notes on the Communist countries. The report presents highlights of Romania's agricultural policy, production and trade. Data for the late 1960's are compared with earlier years. (See October 1970 Farm Index.)

U.S. PEACH INDUSTRY: PART 1. STRUCTURE, TRENDS, AND CONSUMPTION PROJECTIONS TO 1980. Yvonne Davies, and Warren Trotter, Marketing Economic Division. AER 200.

This is the first of a two-part study in which the economics of the peach industry are examined. Recent trends in production, utilization, price, and consumption are analyzed for both fresh and processed peaches. The changing patterns of consumer demand for peach products are projected to 1980. (See February 1971 Farm Index.)

COSTS AND RETURNS: MIGRATORY-SHEEP OPERATIONS, UTAH-NEVADA, 1960–69. Wylie D. Goodsell, Farm Production Economics Division. AER 195.

Returns were substantially higher the past 7 years on migratory-sheep ranches in Utah-Nevada, the top U.S. sheep and wool producing area of its kind. Responsible were generally higher prices received for lambs, improved range conditions, increased market weights of lambs, and greater output per ranch. (See page 7 this issue.)

EFFECT OF URBAN EXPANSION ON DAIRYING IN THE LAKE STATES. 1949–69. David E. Cummins, Farm Production Economics Division. AER 196.

This study investigates the long-run dynamic forces underlying the recent abrupt changes in Lake States dairying. It also assesses the future dairy structure in the region and its potential as a milk supplier.

Article Sources

State publications indicated by (*) may be obtained only from the experiment station or university cited. Manuscripts and special material are usually available only on request to authors.

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3. W. Herbert Brown, FPED. "Soybean Production Response to Price and Programs" (manuscript).
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24. William Gasser, FRAD. Sources of Change in Mexican Agricultural Production 1940–65 (manuscript).
25. Richard S. Magleby and Edmond Missiaen, FRAD. *World Demand Prospects for Cotton in 1980 With Emphasis on Trade by Less Developed Countries,* FAER No. 000.
26. Robert D. Reinsel and Ivery Clifton, FPED. Farm Real Estate Values (manuscript).

NOTE: Unless otherwise indicated, authors are on the staff of the Economic Research Service (ERS) with their divisions designated as follows: Economic and Statistical Analysis Division (ESAD); Economic Development Division (EDD); Farm Production Economic Division (FPED); Foreign Development and Trade Division (FDTD); Foreign Regional Analysis Division (FRAD); Marketing Economic Division (MED); and Natural Resource Economics Division (NRED).

Economic Trends

ITEM	UNIT OR BASE PERIOD	1967	1970 YEAR	1970 Mar.	1971 Jan.	1971 Feb.	1971 Mar.
Prices:							
Prices received by farmers	1967 = 100	—	110	114	107	112	112
Crops	1967 = 100	—	101	98	103	105	108
Livestock and products	1967 = 100	—	118	125	110	117	114
Prices paid, interest, taxes and wage rates	1967 = 100	—	114	113	117	118	118
Family living items	1967 = 100	—	114	112	116	117	117
Production items	1967 = 100	—	109	108	112	113	114
Ratio [1]		—	—	101	91	95	95
Wholesale prices, all commodities	1967 = 100	—	110.4	109.9	111.8	112.8	113.0
Industrial commodities	1967 = 100	—	110.0	108.9	112.2	112.5	112.8
Farm products	1967 = 100	—	111.0	114.6	108.9	113.9	113.0
Processed foods and feeds	1967 = 100	—	112.0	111.8	111.8	113.3	113.7
Consumer price index, all items	1967 = 100	—	116.3	114.5	119.2	119.4	119.8
Food	1967 = 100	—	114.9	114.2	115.5	115.9	117.0
Farm Food Market Basket: [2]							
Retail cost	Dollars	1,080	1,225	1,224	1,212	1,215	1,228
Farm value	Dollars	414	480	510	450	473	476
Farm-retail spread	Dollars	666	745	714	762	742	752
Farmers' share of retail cost	Percent	38	39	42	37	39	39
Farm Income: [3]							
Volume of farm marketings	1967	100	103	83	114	82	86
Cash receipts from farm marketings	Million dollars	42,693	48,678	3,584	4,157	3,330	3,600
Crops	Million dollars	18,434	19,589	1,003	1,851	1,102	1,100
Livestock and products	Million dollars	24,259	29,089	2,581	2,306	2,228	2,500
Realized gross income [4]	Billion dollars	49.0	56.2	56.3	—	—	56.1
Farm production expenses [4]	Billion dollars	34.8	40.4	39.8	—	—	41.5
Realized net income [4]	Billion dollars	14.2	15.8	16.5	—	—	14.6
Agricultural Trade:							
Agricultural exports	Million dollars	—	7,174	571	672	636	716
Agricultural imports	Million dollars	—	5,667	524	507	420	500
Land Values:							
Average value per acre	1967 = 100	—	[6] 118	[7] 117	—	—	[8] 121
Total value of farm real estate	Billion dollars	—	[6] 207.3	[7] 208.2	—	—	[8] 214.0
Gross National Product: [4]	Billion dollars	793.9	976.5	959.5	—	—	1,018.4
Consumption	Billion dollars	492.1	616.7	603.1	—	—	644.7
Investment	Billion dollars	116.6	135.7	133.2	—	—	142.9
Government expenditures	Billion dollars	180.1	220.5	219.6	—	—	228.0
Net exports	Billion dollars	5.2	3.6	3.5	—	—	2.8
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	629.3	801.0	787.6	827.4	830.4	836.3
Total retail sales, monthly rate	Million dollars	26,151	30,381	29,801	31,100	31,341	—
Retail sales of food group, monthly rate	Million dollars	5,759	6,787	6,679	6,895	6,910	—
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	78.6	79.0	78.9	78.5	78.5
Agricultural	Millions	3.8	3.5	3.5	3.4	3.3	3.4
Rate of unemployment	Percent	3.8	4.9	4.4	6.0	5.8	6.0
Workweek in manufacturing	Hours	40.6	39.8	40.2	39.8	39.5	39.9
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	3.36	3.31	3.50	3.51	3.52
Industrial Production: [5]	1967 = 100	—	106	108	105	104	104
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	45,712	55,554	55,223	56,504	57,225	—
Total inventories, book value end of month	Million dollars	82,825	99,614	96,982	99,801	99,555	—
Total new orders, monthly rate	Million dollars	45,928	55,009	54,339	57,377	57,653	—

[1] Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2] Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1959–61—estimated monthly. [3] Annual and quarterly data are on 50-State basis. [4] Annual rates seasonally adjusted first-quarter. [5] Seasonally adjusted. [6] As of November 1, 1970. [7] As of March 1, 1970. [8] As of March 1, 1971.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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